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REMARKS

Claims 1-47 are currently pending in the subject application and are presently under consideration. Claims 1, 13-15, 18-21, 32, 38, 44, and 47 have been amended and claims 37 and 45 have been canceled as shown on pp. 2-10 of the Reply. Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

I. Rejection of Claims 1-21 and 44-47 Under 35 U.S.C. §103(a)**A. Claims 1-21**

Claims 1-21 stand rejected under 35 U.S.C. §103(a) because the Examiner contends that these claims are unpatentable over Foley *et al.* U.S. Patent No. 6,487,590 ("Foley *et al.*"). Some of the claims have been amended to further emphasize various aspects of the invention as recited in the claims. Reversal of this rejection is respectfully requested for at least the following reasons. Foley *et al.* fails to teach or suggest *all* of the claim limitations. With regard to claim 1, Foley *et al.* does not teach or suggest a *lifetime manager* operable to *control the lifetime* of a remote object. With regard to claim 21, Foley *et al.* does not teach or suggest a *lifetime managing component* operable to *control the lifetime* of a remote object. Thus, the cited prior art does not teach or suggest the claimed invention as a *whole*.

The test of obviousness is whether "the subject matter sought to be patented and the prior art are such that the subject matter as a *whole* would have been obvious at the time the invention was made to a person having ordinary skill in the art." (*Graham v. John Deere Co.*, 383 U.S. 1, 3 (1966) (emphasis added); *see also e.g., In re Dembiczak*, 175 F.3d 994, 998, 50 U.S.P.Q. 1614, 1616 (Fed. Cir. 1999)). In evaluating obviousness, the PTO must conduct the factual inquiry as outlined in *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). (*See In re Lee*, 277 F.3d 1338, 1342-43, 61 U.S.P.Q.2d 1430, 1433 (Fed. Cir. 2002)). The factual inquiry to be conducted includes determining: (1) the scope and content of the prior art; (2) the level of ordinary skill in the prior art; (3) the differences between the claimed invention and the prior art; and (4) objective evidence of nonobviousness. (*See Graham*, 383 U.S. 1, 17-18 (1966)). The PTO must "not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion." (*In*

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re Lee, 277 F.3d at 1344, 61 U.S.P.Q.2d at 1434). The PTO cannot rely merely on conclusory statements and assertions of "common sense" to remedy the deficiencies of the cited references. (*In re Lee*, 277 F.3d at 1344, 61 U.S.P.Q.2d at 1434).

Historically, remote objects have created problems such as memory leaks caused by objects that outlive the entities that employ the objects. (*See e.g.*, Application at p. 16, lines 12-14). Conventional attempts to alleviate memory leaks can produce unwanted side-effects such as providing an avenue for denial of service attacks. (*See e.g.*, Application at p. 16, lines 14-15). The systems and computer-readable media recited in the subject claims employ a lifetime manager to *control the lifetime* of a remote object, which can, for example, mitigate memory leak problems and/or denial of service attacks. (*See e.g.*, Application at p. 10, lines 24-23; p. 11, line 18; p. 16, line 10 through p. 19, line 11; p. 24, line 19 through p. 26 line 11; and Figs. 3, 4, 9, 10 and 15). The lifetime manager may interact with, for example, lifetime information and/or a garbage collector to control the lifetime of the remote object. (*See e.g.*, Application at p. 16, lines 11-12). Lifetime information includes, but is not limited to, an initial lease time, a renew on access lease time, a lease sponsor and references to garbage collection objects and/or services. (*See e.g.*, Application at p. 11, lines 1-3). A lifetime monitor may, for example, examine the object reference associated with an object and perform processing including, but not limited to, extending a lease on the object, signaling a lease sponsor associated with the object, and re-ordering one or more records associated with lease management. (*See e.g.*, Application at p. 12, lines 2-5). The systems and computer-readable media recited in the subject claims may employ a variety of lifetime services to control the lifetime of remote objects. (*See e.g.*, Application at p. 16, line 18 through p. 19, line 11).

Foley *et al.* teaches a method for managing a network element from a client at a remote workstation. To manage objects, the client interacts with an element management server through an interface utilizing the Common Object Request Broker Architecture ("COBRA"). (*See e.g.*, Foley *et al.* at col. 3, lines 44-66 and Fig. 1). Foley *et al.* does not disclose a lifetime manager (or a lifetime managing component) that is operable to *control the lifetime* of a remote object. In the Office Action dated July 28, 2004, the Examiner contends that Foley *et al.* teaches *monitoring* the lifetime of a remote object because object status is reported. (*See Office Action* dated July 28, 2004 at p. 4). However, the Examiner does not contend that Foley *et al.* teaches *controlling* the lifetime of a remote object. Indeed, nowhere in Foley *et al.* is controlling the

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lifetime of a remote object taught or suggested. Independent claims 1 and 21 recite the limitation a *lifetime manager* (or a *lifetime managing component*) operable to *control the lifetime* of a remote object. By controlling the lifetime of the remote objects, the systems and computer-readable media recited in the claims are useful to mitigate problems associated with memory leaks and/or denial of service attacks, which is an advantage over conventional systems (e.g., reference counting systems).

In view of at least the foregoing, it is apparent that Foley *et al.* does not teach or suggest *every* limitation of the claims. In particular, Foley *et al.* does not teach or suggest a *lifetime manager* (or a *lifetime managing component*) operable to *control the lifetime* of a remote object. Thus, the cited prior art does not teach or suggest the claimed invention as a *whole*. Accordingly, the subject claims are in condition for allowance and applicant's representative respectfully requests that the rejection of claims 1 and 21, and the claims that depend there from, be withdrawn.

B. Claims 44-47

Claims 44-47 stand rejected under 35 U.S.C. §103(a) because the Examiner contends that these claims are unpatentable over Foley *et al.* Some of the claims have been amended to further emphasize various aspects of the invention as recited in the claims. Claim 45 has been canceled. Reversal of this rejection is respectfully requested for at least the following reasons. Foley *et al.* does not teach or suggests *every* limitation of the claims. In particular, for at least the reasons stated in Section I(A) *supra*, Foley *et al.* does not teach or suggest a data packet having a second field that stores information associated with monitoring and *controlling the lifetime* of a remote object. Thus, the cited prior art does not teach or suggest the claimed invention as a *whole*. Accordingly, the subject claims are in condition for allowance and applicant's representative respectfully requests that the rejection of claims 44 and 46-47 be withdrawn.

II. Rejection of Claims 22-29, 31-37 and 40-42 Under 35 U.S.C. §103(a)

A. Claims 22-29 and 31

Claims 22-29 and 31 stand rejected under 35 U.S.C. §103(a) because the Examiner contends that these claims are unpatentable over Foley *et al.* in view of Bainbridge *et al.* U.S.

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Patent No. 6,014,700 ("*Bainbridge et al.*"). Reversal of this rejection is respectfully requested for at least the following reasons. *Foley et al.* and *Bainbridge et al.*, either alone or together, fail to teach or suggest *all* of the claim limitations. In particular, neither *Foley et al.* nor *Bainbridge et al.* teach or suggest systems or computer-readable media that have a *lifetime monitor* (or a *lifetime monitoring component*) operable to *manage the lifetime* of a remote object. Thus, the cited prior art does not teach or suggest the claimed invention as a *whole*.

As described in the subject patent application, *managing* the lifetime of a remote object includes, but is not limited to, *controlling* the lifetime of the remote object. (See e.g., Application at p. 12, lines 1-5; and p. 16, line 10 through p. 19, line 11). As explained in Section I(A) *supra*, *Foley et al.* does not teach or suggest controlling the lifetime of a remote object. *Bainbridge et al.* does not make up for this deficiency and the Examiner does not contend otherwise. (See Office Action at pp. 5-7). Thus, *Foley et al.* and *Bainbridge et al.*, alone or in combination, do not teach or suggest *every* limitation of the subject claims and, therefore, do not teach or suggest the invention as recited in the claims as a *whole*.

For at least the reasons discussed in this section and Section I(A) *supra*, neither *Foley et al.* nor *Bainbridge et al.* teach or suggest systems or computer-readable media that have a *lifetime monitor* (or a *lifetime monitoring component*) operable to *manage the lifetime* of a remote object. Applicant's representative respectfully requests that this rejection be withdrawn and that claims 22-29 and 31 be allowed.

B. Claims 32-37 and 40-42

Claims 32-37 and 40-42 stand rejected under 35 U.S.C. §103(a) because the Examiner contends that these claims are unpatentable over *Foley et al.* in view of *Bainbridge et al.* Some of the claims have been amended to further emphasize various aspects of the invention as recited in the claims. Claim 37 has been canceled. Reversal of this rejection is respectfully requested for at least the following reasons. Independent claims 32, 41, and 42 contain the limitation *controlling the lifetime of a remote object*. As explained in Section I(A) *supra*, neither *Foley et al.* nor *Bainbridge et al.*, alone or in combination, teach or suggest controlling the lifetime of a remote object. Thus, the cited prior art does not teach or suggest the claimed invention as a *whole*. Accordingly, the subject claims are in condition for allowance and applicant's representative respectfully requests that the rejection of claims 32-36 and 40-42 be withdrawn.

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III. Rejection of Claims 30, 38-39 and 43 Under 35 U.S.C. §103(a)**A. Claim 30**

Claim 30 stands rejected under 35 U.S.C. §103(a) because the Examiner contends it is unpatentable over Foley *et al.* in view of Bainbridge *et al.*, and further in view of King U.S. Patent No. 6,681,263 ("King"). Reversal of this rejection is respectfully requested for at least the following reasons. Neither Foley *et al.*, Bainbridge *et al.* nor King, alone or in combination, teach or suggest *every* limitation of the claim. In particular, claim 30 recites the limitation a *lease manager*, which is not taught or suggested by any of the cited references. Thus, the cited prior art does not teach or suggest the claimed invention as a *whole*. Moreover, the Examiner has not provided *any* argument that a teaching, suggestion, or motivation exist to combine King with Foley *et al.* and Bainbridge *et al.*, and for that reason alone, has failed to establish a *prima facie* case of obviousness. In addition, claim 30 depends from claim 22, which is allowable for at least the reasons stated in Section II(A) *supra*. Accordingly, claim 30 is allowable for at least the same reasons.

King discloses only a conventional garbage collector employing a reference counting system to determine the life of an object. If the object is performing a synchronous task, the system taught by King uses simple reference counting to determine the life of an object. (See *e.g.*, King at col. 2, lines 17-21; col. 4, lines 12-14; and Fig. 1). If the object is performing an asynchronous task, the object sets a flag and increments the reference count. (See *e.g.*, King at col. 4, lines 24-28 and Fig. 2). After the object has completed the asynchronous task, the object resets the flag and decrements the reference count. (See *e.g.*, King at col. 4, lines 47-53 and Fig. 2).

Claim 30 recites the limitation a *lease manager*. King does not teach or suggest a *lease manager*. The system taught by King merely employs a flag and a reference counter to determine the life of an object. A *lease manager*, as recited in claim 30, utilizes a lease to determine the life of an object. The lease manager monitors the leases of remote objects, updates leases as necessary, and otherwise administrates the leases. (See *e.g.*, Application at p. 17, line 1 through p. 19, line 11). For example, the lease manager can decide whether or not to renew an expired lease by querying a lease sponsor. (See *e.g.*, Application at p. 17, lines 7-8). The use of

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a lease manager serves to mitigate problems associated with memory leaks and/or denial of service attacks, which is an advantage over conventional reference counting systems such as the system taught by King. (See e.g., Application at p. 19, lines 8-11). Nowhere in King is a *lease manager*, which is capable of administering a lease to determine the lifetime of a remote object, taught or suggested.

Moreover, the Examiner has not stated *any* teaching, suggestion, or motivation to combine the teachings of King with the teachings of Foley *et al.* and Bainbridge *et al.* (See Office Action at p. 8). If the PTO relies on multiple prior art references as the basis for an obviousness rejection, the PTO must make an adequate showing of a suggestion, teaching, or motivation to combine the prior art references to establish a *prima facie* case of obviousness. (See *In re Dembiczak*, 175 F.3d 994, 999-1001, 50 U.S.P.Q. 1614, 1617 (Fed. Cir. 1999) (citing to *C.R. Bard, Inc., v. M3 Systems, Inc.*, 157 F.3d 1340, 1352, 48 U.S.P.Q.2d 1225, 1232 (Fed. Cir. 1998)); see also *In re Lee*, 277 F.3d at 1343, 61 U.S.P.Q.2d at 1433). Only if the PTO establishes a *prima facie* case of obviousness does the burden of coming forward with evidence or argument shift to the applicant. (See *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1445 (Fed. Cir. 1992)). By failing to state *any* teaching, suggestion, or motivation to combine the cited references, the Examiner has failed to establish a *prima facie* case of obviousness. Only if the PTO establishes a *prima facie* case of obviousness does the burden of coming forward with evidence or argument shift to the applicant. (See *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1445 (Fed. Cir. 1992)).

In view of at least the foregoing, it is apparent that Foley *et al.*, Bainbridge *et al.* and King do not teach or suggest the claimed invention as a *whole*. In particular, none of the cited references disclose a *lease manager*. Moreover, the Examiner has not established a *prima facie* case of obviousness for at least the reason that the Examiner has not stated *any* teaching, suggestion, or motivation to combine the teachings of King with those of Foley *et al.* and Bainbridge *et al.* Hence, claim 30 is in condition for allowance and applicant's representative respectfully requests that the rejection of claim 30 be withdrawn. In addition, claim 30 depends from claim 22, which is allowable for at least the reasons stated in Section II(A) *supra*. Accordingly, claim 30 is allowable for at least the same reasons.

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B. Claim 38

Claim 38 stands rejected under 35 U.S.C. §103(a) because the Examiner contends that it is unpatentable over *Foley et al.* in view of *Bainbridge et al.*, and further in view of *King*. Reversal of this rejection is respectfully requested for at least the following reasons. The Examiner has not provided *any* argument that a teaching, suggestion, or motivation exist to combine *King* with *Foley et al.* and *Bainbridge et al.*, and for that reason alone, has failed to established a *prima facie* case of obviousness. Only if the PTO establishes a *prima facie* case of obviousness does the burden of coming forward with evidence or argument shift to the applicant. (See *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1445 (Fed. Cir. 1992)). In addition, claim 38 depends from claim 32, which has been amended and is allowable for at least the reasons stated in Section II(B) *supra*. Accordingly, claim 38 is allowable for at least the same reasons. Applicant's representative respectfully requests that the rejection of claim 38 be withdrawn and that claim 38 be allowed.

C. Claim 39

Claim 39 stands rejected under 35 U.S.C. §103(a) because the Examiner contends that it is unpatentable over *Foley et al.* in view of *Bainbridge et al.*, and further in view of *King*. Reversal of this rejection is respectfully requested for at least the following reasons. Neither *Foley et al.*, *Bainbridge et al.* nor *King*, alone or in combination, teach or suggest *every* limitation of the claim. In particular, claim 39 recites the limitation *querying a lease sponsor before garbage collecting a remote object*, which is not taught or suggested by any of the cited references. Thus, the cited prior art does not teach or suggest the claimed invention as a *whole*. Moreover, the Examiner has not provided *any* argument that a teaching, suggestion, or motivation exist to combine *King* with *Foley et al.* and *Bainbridge et al.*, and for that reason alone, has failed to established a *prima facie* case of obviousness. In addition, claim 39 depends from claim 32, which has been amended and is allowable for at least the reasons stated in Section II(B) *supra*.

As explained in Section III(A) *supra*, the system taught by *King* merely employs a flag and a reference counter to determine the life of an object. Claim 39 recites the limitation *querying a lease sponsor before garbage collecting a remote object*. *King* does not teach or suggest *querying a lease sponsor before garbage collecting a remote object* and the Examiner

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does not contend otherwise. (See Office Action at p. 8). A *lease sponsor* is a component that has the opportunity to affect the running of a lease for a remote object. (See e.g., Application at p. 17, lines 24-25). Querying a lease sponsor before garbage collecting a remote object may include, for example, asking the lease sponsor to renew a lease. (See e.g., Application at p. 19, line 3). The use of a lease sponsor serves to mitigate problems associated with memory leaks and/or denial of service attacks, which is an advantage over conventional reference counting systems such as the system taught by King. (See e.g., Application at p. 19, lines 8-11). Nowhere in King is *querying a lease sponsor before garbage collecting a remote object* taught or suggested and the Examiner does not contend otherwise.

In view of at least the foregoing, it is apparent that Foley *et al.*, Bainbridge *et al.* and King do not teach or suggest the claimed invention as a *whole*. In particular, none of the cited references disclose *querying a lease sponsor before garbage collecting a remote object*. Moreover, the Examiner has not established a *prima facie* case of obviousness for at least the reason that the Examiner has not stated *any* teaching, suggestion, or motivation to combine the teachings of King with those of Foley *et al.* and Bainbridge *et al.* In addition, claim 39 depends from claim 32, which has been amended and is allowable for at least the reasons stated in Section II(B) *supra*. Accordingly, claim 39 is allowable for at least the same reasons. Applicant's representative respectfully requests that the rejection of claim 39 be withdrawn and that claim 39 be allowed.

D. Claim 43

Claim 43 stands rejected under 35 U.S.C. §103(a) because the Examiner contends that it is unpatentable over Foley *et al.* in view of Bainbridge *et al.*, and further in view of King. Reversal of this rejection is respectfully requested for at least the following reasons. The Examiner has not provided *any* argument that a teaching, suggestion, or motivation exists to combine the teachings of King with those of Foley *et al.* and Bainbridge *et al.*, and for that reason alone, has failed to establish a *prima facie* case of obviousness. Only if the PTO establishes a *prima facie* case of obviousness does the burden of coming forward with evidence or argument shift to the applicant. (See *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1445 (Fed. Cir. 1992)). Accordingly, claim 43 is in condition for allowance and applicant's representative respectfully requests that the rejection of claim 43 be withdrawn.

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Conclusion

The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063.

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number below.

Respectfully submitted,

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